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ABSTRACT

This presentation focuses on a theory of personality development, conceptual systems theory, as a possible resource for the counselor assisting clients in stress. It describes the results of a factor analysis of four measures of conceptual structure which suggested that the construct of conceptual complexity is different from the construct of conceptual level. A significant multiple correlation was reported between the two variables comprising the conceptual level factor (Tuckman's Interpersonal Topical Inventory and Hunt's Paragraph Completion Test), and an overall index of self-actualization derived from Shostrom's Personal Orientation Inventory. Both the factor analytic and the regression results were discussed as they related to counseling research and practice. (Author)

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# Conceptual Complexity and Self-Actualization

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This presentation focuses on a theory of personality development, conceptual systems theory, as a possible resource for counselors assisting clients who experience stress in their attempts to cope with a changing environment. This will be approached by considering first the construct validity of a model of conceptual complexity by factor analyzing four measures of conceptual structure, and second, by a regression investigation of the relationship between conceptual complexity and self - actualization.

Conceptual complexity is a construct which describes the abstractness of a person's thought structure. MacNeil (1974) synthesized various conceptual systems theories and suggested that "the level of conceptual complexity is a function of the complexity of the discriminating structure, differentiation, and the complexity of the integrative structure, integration" (p. 3). Differentiation is the breaking of a novel stimulus into more clearly defined parts. Integration is the relating of such parts to each other and to previous conceptual standards. Conceptual systems theory suggests that conceptually complex individuals have the capacity for high levels of both differentiation and integration. Theoretically, it seems possible to assess a person's overall level of conceptual complexity along with an assessment of the complexity levels of both the discriminating and integrating structures.

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Two overall estimates of conceptual complexity were obtained from the Paragraph Completion Test (Hunt et al, 1968) and the Interpersonal Topical Inventory (Tuckman, 1966). Another instrument, the Interpersonal Discrimination Test (Carr, 1965) was chosen as a measure of differentiation and Wyer's Integration Test (1962) was chosen as a measure of integration. Subjects were 117 female undergraduates enrolled in an introductory psychology course.

It was hypothesized that two factors would emerge from a factor analysis of these measures of conceptual structure. It was expected that one factor would be represented by a loading from the measure of differentiation and the other factor represented by a loading from the measure of integration. Furthermore, it was hypothesized that the overall measures of complexity would load on both factors.

Six variables were required to sufficiently overdetermine two factors. The number of measures of conceptual structure was increased from four to six by deriving two differentiation scores from the Interpersonal Discrimination Test and by deriving two integration scores from Wyer's Integration Test.

A 6 x 6 matrix composed of Pearson product moment correlations was computed for all pairwise combinations of the conceptual structure variables. Squared multiple correlations were used to estimate the communalities and the factors were extracted by the principal axis technique.

(Display Table 1)

Table 1 presents the eigenvalues and variance percentages corresponding to each possible factor. Two methods of factor retention, the scree test and a method described by Montanelli and Humphreys (1976), suggested that three factors be included in the rotation.

(Display Table 2)

The orthogonally rotated factor matrix was considered the best approximation of simple structure and is presented in Table 2. The results did not confirm the hypothesized factor model of conceptual complexity. As expected, Factor I is composed of loadings from Wyer's Integration Test and Factor II is composed of loadings from the Interpersonal Discrimination Test. However, the presence of Factor III, composed of loadings from the Paragraph Completion Test and the Interpersonal Topical Inventory, was not expected.

(Display Table 3)

One question is whether Factor I and Factor II would retain sufficient visibility within the factor structure without the assistance of the high correlations between the split halves of the measures of integration and differentiation that are highlighted in Table 3.

(Display Table 4)

Table 4 presents the results of a factor analysis of the 4 x 4 correlation matrix. The factors corresponding to integration and differentiation are no longer present. The only factor with loadings of .30 or greater is represented by a composite of the Paragraph Completion Test and the Interpersonal Topical Inventory.

One consistent trend seems to emerge from both analyses. The Paragraph Completion Test and the Interpersonal Topical Inventory appear to be related to a common construct. This construct is most likely orthogonal to the measure of integration and orthogonal to the measure of differentiation employed in the present study. However, support was

not found for the hypothesis that conceptual complexity is comprised of two components, an integrating and a differentiating structure. This interpretation is comparable to Vannoy's (1965) conclusion and suggests that conceptual complexity is not adequately measured by the conceptual structure variables used in the present research.

One possible explanation for obtaining results contrary to the hypothesized factor structure might be that the instruments vary in emphasis between the content and the structure of the subjects' responses. The Interpersonal Topical Inventory and the Paragraph Completion Test appear to emphasize the content of the subject's response, while the Interpersonal Discrimination Test and Wyer's Integration Test seem to emphasize the structure of the subject's response. This variation in emphasis might account for the lack of relationship between the two sets of conceptual measures.

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Theoretically, the construct of conceptual complexity has wide application for counseling theory and practice. However, as Suedfeld (1971) has noted, the lack of operational explicitness makes the transition from theory to application very difficult. The results of the present research may be one response to Suedfeld's observation. Since support was not found for the hypothesized factor structure corresponding to a model of conceptual complexity, it seems inappropriate to subsequently refer to a predicted relationship between conceptual complexity and another construct. Therefore, one suggestion for research employing the construct of conceptual complexity might be to first, hypothesize a model of conceptual complexity;

second, select those instruments corresponding to the components of the model instead of estimating the construct from a single instrument; and third, examine the validity of the model prior to investigating the relationship between complexity level and other variables.

This approach was followed in the consideration of the relationship between conceptual complexity and self - actualization. The initial remarks of this presentation suggested that conceptual systems theory may be a resource for assisting clients who are experiencing stress. The literature implies that conceptually complex persons are presumably more adaptive to a changing environment than are conceptually simple persons. The hypothesis that "Conceptual Complexity is positively related to self - actualization" was formulated as one test of this assumption.

Self - actualization was operationally defined by scores on Shostrom's Personal Orientation Inventory. This estimate consisted of the raw score total of the two major sub - scales, time competence and inner directedness. To test the hypothesis, a multiple correlation was computed between a composite of the conceptual structure variables and the POI scores. Support was found for the hypothesis that conceptual complexity is positively related to self - actualization. A multiple correlation of .32 was found to be significnat ($F = 3.246$, $df = 4, 112$, $p = .04$). The regression coefficients for each of the predictor variables were tested to see which of the variables significantly contributed to the prediction of the POI score. The results of the t tests suggest that the Interpersonal Topical Inventory makes a unique and significant contribution, $p = .02$, and tentatively that the Paragraph Completion Test also makes a contribution, $p = .075$.

Adherence to the research strategy previously advocated in this presentation requires caution in stating the existence of a relationship between conceptual complexity and self - actualization. Since the results of the factor analysis did not validate the construct of conceptual complexity, the regression results are interpreted to suggest the existence of a positive relationship between a composite of the Interpersonal Topical Inventory and Paragraph Completion Test and self - actualization.

Previously, it was noted that the Paragraph Completion Test and the Interpersonal Topical Inventory seem to emphasize the content of the subjects' responses. This emphasis corresponds more closely to Hunt's conceptual system theory that advocates conceptual level as an index of structural complexity than to other conceptual systems theories. Assuming that the Paragraph Completion Test and Interpersonal Topical Inventory are measures of conceptual level, one possible interpretation of the regression results is to suggest that a positive relationship exists between conceptual level and self - actualization. This statement may have implications for assisting clients who are experiencing stress. The conceptual systems theorists, for example, Hunt (1971), have proposed various methods that might be effective in increasing a person's conceptual level. It is suggested that one way to assist clients who are experiencing stress might be to expose them to treatments designed to increase their conceptual level which may lead to an increase in their ability to cope with a stressful environment.

In summary, two suggestions seem warranted for future research. First, it is suggested that more research be undertaken to investigate the relationship between conceptual level and other estimates of healthy

psychological functioning. It might also be useful to investigate the relationship between conceptual level and the outcomes of successful or unsuccessful counseling. Second, it is suggested that more research is required to adequately construct and validate a model of conceptual complexity. It seems that more emphasis on the latter is necessary to bridge the gap between theory and application.

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TABLE 1

EIGENVALUES AND FACTOR VARIANCES

| Factors | Eigenvalues | Variance |
|---|---|---|
| 1 | 1.201 | 68.75 |
| 2 | 0.753 | 43.08 |
| 3 | 0.420 | 24.03 |
| 4 | -0.110 | - 6.27 |
| 5 | -0.207 | -11.83 |
| 6 | -0.310 | -17.76 |

TABLE 2

ORTHOGONALLY ROTATED FACTOR MATRIX

| Variables | Factor I | Factor II | Factor III | $h^2$ |
|---|---|---|---|---|
| 1. Paragraph Completion Test (overall complexity level) | -0.053 | -0.048 | 0.397 | 0.163 |
| 2. Interpersonal Topical Inventory (overall complexity level) | 0.018 | 0.035 | 0.473 | 0.225 |
| 3. Myer's Integration Test - Odd (integration) | 0.774 | 0.050 | 0.036 | 0.602 |
| 4. Myer's Integration Test - Even (integration) | 0.766 | -0.026 | -0.103 | 0.598 |
| 5. Interpersonal Discrimination Test - Odd (differentiation) | 0.066 | 0.624 | 0.108 | 0.406 |
| 6. Interpersonal Discrimination Test - Even (differentiation) | -0.045 | 0.599 | -0.137 | 0.380 |

TABLE 3

PEARSON PRODUCT MOMENT CORRELATIONS

AMONG THE CONCEPTUAL COMPLEXITY VARIABLES

| Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Paragraph Completion Test | 1.000 | | | | | |
| 2. Interpersonal Topical Inventory | 0.256 | 1.000 | | | | |
| 3. Wyer's Integration Test - Odd | -0.011 | 0.038 | 1.000 | | | |
| 4. Wyer's Integration Test - Even | -0.102 | -0.043 | 0.691 | 1.000 | | |
| 5. Interpersonal Discrimination Test - Odd | -0.013 | 0.149 | 0.114 | 0.008 | 1.000 | |
| 6. Interpersonal Discrimination Test - Even | -0.071 | -0.112 | -0.025 | -0.035 | 0.473 | 1.000 |

TABLE 4

ORTHOGONALLY ROTATED FACTOR MATRIX

OF THE 4 x 4 CORRELATION MATRIX

| Variables | Factor I | Factor II | $h^2$ |
|---|---|---|---|
| 1. Paragraph Completion Test (overall complexity level) | 0.409 | 0.011 | 0.167 |
| 2. Interpersonal Topical Inventory (overall complexity level) | 0.397 | -0.032 | 0.159 |
| 3. Wyer's Integration Test (integration) | -0.072 | -0.222 | 0.055 |
| 4. Interpersonal Discrimination Test (differentiation) | -0.034 | 0.217 | 0.048 |

# CONCEPTUAL COMPLEXITY AND SELF-ACTUALIZATION

Jon A. Hageseth

## ABSTRACT

This presentation focuses on a theory of personality development, conceptual systems theory, as a possible resource for the counselor assisting clients in stress. The results of a factor analysis of four measures of conceptual structure suggested that the construct of conceptual complexity is different from the construct of conceptual level. A significant multiple correlation, R= .32, was reported between the two variables comprising the conceptual level factor, Tuckman's Interpersonal Topical Inventory and Hunt's Paragraph Completion Test, and an overall index of self-actualization derived from Shostrom's Personal Orientation Inventory. Both the factor analytic and regression results were discussed as they related to counseling research and practice.